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FEELING COLONIAL: THE JAMES WEBB SPACE TELESCOPE, THE SEARCH FOR EXOPLANETS, AND THE AFFECTIVE EXPERIENCE OF COLONIZATION

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ABSTRACT

Traditional arguments about exigence have focused on whether a situation in the world creates the urgency and need to act or whether the speaking itself creates the urgency. Numerous critiques have complicated this pairing, including Jenny Edbauer's work on rhetorical ecologies where affect circulates and can be public. Studying feelings around space colonization pushes toward an even more central role for affect in defining exigence. Exigence can be the main point of most rhetorical acts both towards others and the self. Beyond making a case or identifying with someone, the goal is to create a common feeling of urgency with a common style or set of emotional links (joyful, angry, offended, etc.). This feeling is the base for action and any further justifications that are needed, even as those justifications further drive the feeling.

This essay explores affective elements of space colonization, combining language around the James Webb Space Telescope (JWST) and its occasional looks at potentially habitable exoplanets with glimpses of space colonization fiction for the affective elements of colonization presented. While space colonization is not the same thing as earthly colonization of inhabited places, it ultimately runs into many of the same issues of exploitation while asserting a kind of ultimate ethical importance, in this case, the preservation of the human species. The affective power of this purpose combined with the sense of adventure involved make arguments against space colonization difficult and call for an expanded understanding of how colonizing affects even the senses of the colonizers.

Keywords: Affect Theory, Exigence, Rhetoric of Science, James Webb Space Telescope, Colonization

INTRODUCTION

The James Webb telescope is an extension of human desires. Which desires? Certainly knowledge-based desires are part of it, with interests in where we come from, the history of the universe we live in, and how stars work. Desires about the future are part of it too with the hope of finding habitable exoplanets or at least getting minerals and resources to use on Earth. More than either of those is perhaps a desire about the place of humans in the universe—an attempt to situate ourselves in a 14-billion-year narrative or simply to find a long story of the universe to tell. Part of that situating is directly about place. What land have we chosen to live on? Where should we, as humans, go or not go? Those questions have a privileged element to them. They imply the power to choose places and travel somewhat at will. This, of course, is not the case fully for anyone, while many people have incredibly limited choices as conflict or environmental issues lead to necessary (and often dangerous) migrations. The power imbalances over land and space bring in the long history of colonialism—settler colonialism that involves moving to a place, extractive colonialism that uses resources from a place outside of the colonizers' home, and other subcategories and types.

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Put another way, is there such a thing as a good colonialism or colonization? Of course, the "good" there would have to be clarified and defined, but in a social context where anticolonial work is rightly considered vital (by some—and is controversial in American politics and mass media), is space colonization just a reproduction of old colonial attitudes and actions in new territory? Or, does moving off of Earth and exploring places that are actually, we think, uninhabited by life forms of any sort change the equation? Feeling colonial is frequently about fear, adventure, purpose, suffering, anxiety Morton (2019), and optimism. Colonialism is a set of felt tensions (optimism about where one is going, pessimism about the future here; fear of problems here and excitement about adventure). Colonization is an affectively powerful idea and experience for the colonizer. It can be about desperation or hope or escape, but for those in charge of advocating for colonization and promoting it, colonization tends to be a purposeful, adventurous need, often with a perceived moral imperative behind it. Rhetoric becomes a struggle over which feelings can be shown as stronger and more important. A direct version of that struggle happens with movements and slogans like "Black Lives Matter" and "Blue Lives Matter." Whose strong feelings based on experiences matter more? Putting these together as semi-equivalent might even seem offensive (because of the strong feelings), but nuances of history and combined identities are often lost in the strong feeling struggle for a dominant exigence.

Traditional arguments about exigence have focused on whether the situation in the world creates the urgency and need to act or whether the speaking itself creates the urgency Baxter (2009), Vatz (1973). Numerous critiques have complicated this pairing, including Edbauer (2005) work on rhetorical ecologies where affect circulates and can be public. Studying feelings around colonization pushes toward an even more central role for affect in defining exigence. Exigence already is discussed as a kind of feeling, an urgency, with various levels of intensity. It is also the point of most rhetorical acts both towards others and the self. Beyond making a case or identifying with someone, the goal is to create a common feeling of urgency with a common style or set of connotations around it (joyful, angry, offended, etc.). This feeling is the base for action and any further justifications that are needed, even as those justifications (like arguing that we must save the human species) further drive the feeling.

This essay explores affective elements of space colonization, combining language around the JWST and its occasional looks at potentially habitable exoplanets with glimpses of space colonization fiction for the affective elements of colonization presented. While space colonization is not the same thing as earthly colonization of inhabited places, it ultimately runs into many of the same issues of exploitation while asserting a kind of ultimate ethical importance, namely, the preservation of the human species. The affective power of this purpose combined with the sense of adventure involved make arguments against space colonization difficult and call for an expanded understanding of how colonizing affects even the senses of the colonizers.

AFFECT THEORY AND EXPANDING COLONIZATION

Pragyan, a moon rover from the Indian Space Research Organization, unexpectedly found significant amounts of sulfur on the moon. Excitement about making it to the moon for India and finding more mineable elements gives "further inspiration to explore the moon" Gillis-Davis (2023). The finding of sulfur on the moon leads to excitement about the possibility of living off the land on the moon and setting up moon bases. Hope, possibility, excitement: these are the feelings suggested by even basic news articles. Where are the lesser, slightly more disturbed feelings? Affective responses connected to space have often been of the positive, wondrous variety, as Ngai (2005) points out in Ugly Feelings, but there are darker, messier, and pettier feelings too. The "weaker and nastier" (2005, p. 7) feelings Ngai spends time analyzing fit moments of skepticism about spending massive funds to go off Earth rather than to work on it.

Here, space colonization runs off of a kind of affective energy. Affect is powerful and visceral and material, a kind of intensity Massumi (2002), Gunn (2011)—like the thrill (or shudder) down the spine when imagining living on the moon. It can be prior to named feelings, but then can meld into feelings humans describe, like excitement or like anger around powerlessness and inequity that can be apparent in something so beyond most of us like reaching into space Worsham (1998). These affective responses are not just individual either. They can involve whole communities and social or public feelings Edbauer (2005), like smaller versions of the collective horror around the Challenger explosion or the awe at the first release of deep field images from the JWST. The JWST, in other words, is also a tool for enhancing (space) colonial feelings, perhaps tied to that compulsion that if people can do something they should, or at least will. Is there a good—or at least neutral—colonialism if one moves off Earth? Of course, the colonizing happening off of Earth still has a huge Earthly impact with resources used and choices made and people included and not in the process. The JWST is a step in seeing possible places for colonization and therefore making it feel just realistic enough to move to the next step. In that way, it's a little like older technologies for crossing oceans more easily so "resources" elsewhere start to feel like an attainable desire. The JWST is part of creating affective experiences that can promote space colonization and is an effect of those affective moments too. The affective experience made is an experience of exigence, of the importance of doing and speaking space colonization into further existence. At the same time, scientific work like that with the JWST's images pushes the affective intensities toward a more rationalized narrative Edbauer (2005), Sedgwick (2003), Worsham (1998). The excitement and necessity in feelings are hidden beyond reasons around scientific data, resource discovery and extraction, or even concerns about the environment on Earth. The narratives of colonization that link to affective moments show the importance of affect for colonization.

SENSORY COLONIZATION AND PHOSOPOWER

Is all exploration colonization? If the observer, as claimed in physics, always changes the system that includes the observed, then exploration—even sensory colonization sorts of exploration like looking through a telescope lens from billions of light years away—changes what is explored. The most basic form of colonization might be this kind of looking but looking (almost) always leads to doing. I "found" the land so I go to the land and see what "resources" it has. With the JWST scientists and the public who follow it on social media see an earlier stage of the universe and use that information to...what? We'll find out in the future, but some of the looking is already centered on places like the TRAPPIST-1 system and its planets in the so-called habitable zone. That looking connected to the concept of physical human colonization (even if not there, as they are too far to reach under current or near-future technology) is paired with the JWST looking at galaxies and star formation from many billions of years ago, which implies a certain kind of observing power. As Said (1978) wrote about the discourse that shaped the "Orient" and therefore the "Occident," the power to look and then describe, name, and visualize is a colonizing step (among other things, with useful science involved) in the visual and mental realm.

Telescopes may re-center humans by expanding our sensory reach. Post-Galileo, humans have continued to lose a sense of spatial centrality and importance. Humans just get smaller and more minor relative to the size of the universe. Extending our senses into space and time is a way of permeating that universe—getting bigger—and even if not central, occupying (colonizing) lots of it. Rather than focusing strictly on colonization in terms of human movement and resource use, the JWST and space discourse may colonize senses too, or use enhanced senses to give the affective experience of colonizing distant places to some degree. Sensory colonization complicates the notion of colonialism and it is a form of power that is "open, qualitative, and affective" as it reaches the "consciousnesses and bodies of the population" in Michael Hardt and Antonio Negri's way of explaining contemporary power (2000, p. 24). JWST images as part of a sensory colonization gets into us and changes us not through discipline but through shaping perceptions of the world.

It is also power that is not so much biopower as literal light power—from stars. It is phosopower. This activity of extension gives a sense of importance and a sense of purpose or project for humans. Surveillance over time and distance here is not about trying to control humans out there in the more political and institutional sense Michel Foucault (1977) uses; instead, surveillance of distant places is used to create a particular kind of imagination on Earth. It is more about the observers than the observed (more about the guards in the panoptic prison than the brightly glowing, billions-of-years-old prisoners). The dimensions of time and space create a subject position that is miniscule in size but massive in sensorial scope. Telescope power gives one of the gentlest forms of colonization known, but it still places the observers—not just scientists, but anyone with a web link and an interest in the images—in the role of controlling knowledge and categories about the observed (the observed universe in this case). Humans can experience and feel the position of micro-masters of the universe. Of course, this all happens with significant constraints. More forceful forms of control and colonization like troops, trade of material products, and political power over distant stars are not available. Not in the traditional sense at least. Work to take resources from nearby space is already ongoing and the politics of what energies should and should not go into moving humans off the Earth (missions to Mars, for example) are already present. The troops and the technology for all this observation have a history of going hand-in-hand.

While not about space colonization, Barker (2021) work on "settler space" in North America outlines important concepts that can be translated to issues around space colonization. The book is about the creation of spaces and the use of that for colonization. While the primary context is about the brutal and subtle oppression of Indigenous people by settlers and policies in Canada and the United States in conjunction with each other, the creation of different notions of space is broadly applicable, while the initial context serves, among other things, as a reminder to pay attention to who is being displaced—including on Earth by colonization work that supports moves into space. Phosopower is the use of stars and that universe-wide context to justify the big picture of human expansion over the small cases of displaced people (for example) on Earth.

In particular, colonization attempts to "restructure space and time" Barker (2021), settling the new situation of ownership as normal. The restructuring of space and time is the preparatory work that the JWST is doing, whether human colonization follows soon after or not—even if that human and mining colonization is much closer to Earth than most of what JWST looks at. Restructuring space and time is a restructuring of the senses—what can be perceived and the scope in which it is experienced changes, which can alter priorities. Something like the "overview effect" helps describe this, where those orbiting Earth feel above or beyond all the tiny problems of the planet. It is a human affective experience that deprioritizes many earthly issues. The change in perception and position sets up this experience. In a less powerful but more widely spread way, the perceptive capacities of the JWST push toward a deep time view, rather than an overview, specifically.

The language of colonization itself brings affective responses through its connotations. Barker (2021) notes strong emotive responses to the term "settler" in a negative way by "would-be allies" (p. 6), so settlers as a term has an affective power to it, at least when displacement of others historically is involved. "Settlers" can have adventurous connotations too, for those not connected to or aware of the major histories of displacement and death that have come with settlers. In the JWST application, going to space may be a branch version of "invasions that never ended" Barker (2021). Much of the language of space colonization means continuing to expand and remain outside the Earth's atmosphere. Is it an invasion though? The likelihood of finding miniscule forms of life at some

point could make it so. Space Invaders was a popular early video game, but of course it portrayed little alien ships attacking from space, not humans invading outward into space. The invasion and colonization have started, they just may take a significant time period on the scale that individual humans experience.

Similarly, according to historical geographer Clayton, (1999), of three sets of invading colonial forces: Western "scientific exploration of the world in the Age of Enlightenment, capitalist practices of exchange, and the geopolitics of the nation-state rivalry" (pp. xi-xii). All three of these forces are highly present in space exploration. We may not be in the Age of Enlightenment, but the optimism and centrality of scientific knowledge with space telescopes is one of the strongest descendants of that moment. Asteroid mining and other practices readily bring in capitalist concerns and there is plenty of history of space races between nations, with the United States even creating a space-oriented military branch (perhaps the butt of many jokes thus far, but wholly keeping within a colonizing and future-oriented logic). The JWST is a major element in the scientific exploration aspect, and even questions of which nations cooperate in its construction and use is tied to nation-state rivalries, even as some colonization work may be more about rivalries between private, multi-national companies now. One question is who is the Other in space colonization? Is it people who do not get resources that are spent on space projects? Is it nations without space programs?

To return to feelings, "the embodied experience of being a settler person has positioned the claiming of lands by settler colonial regimes as an intensely affective act that settler colonizers conceptualize, rationalize, and describe in a variety of ways. Affect in this context refers to the diffuse force generated through the engagement between an individual and other people and things that can inspire action or change" Barker (2021). Being a settler feels right as the group builds up that feeling of rightness through their interactions. (Think of William Bradford and the Mayflower compact, for example.) The "mental process of justifying and forgetting this usurpation through a transformative and affective situation in place" is a key process for him Barker (2021). How is justification different with space? Affect includes the ensuing activities around justifying the feelings involved, which is something seen with space colonization as well. The idea of affect as a process includes justification. Put another way, the various justifications given for colonialism come out of affective experiences. If it feels right, important, ethical, and exciting, there must be reasons for that.

The affective aspect of space colonization is reflected in Harvey (2023) story Orbital, which covers fictional lives on the International Space Station for one full orbit of the earth. Roman, a Russian cosmonaut, reflects on a conversation with his daughter and how he wished he had said, "progress is not a thing but a feeling, it's a feeling of adventure and expansion that starts in the belly and works up to the chest (and so often ends in the head where it tends to go wrong). It's a feeling he has almost perpetually when here, in both the biggest and smallest of moments – this belly-chest knowing of the deep beauty of things, and of some improbable grace that has shot him up here in the thick of the stars" (p. 79). Yet, this feeling is one that drives action potentially incredibly harmful to others. The colonial drive comes from frustration and applies to groups as well. One American astronaut character, Shaun, reflects on wanting to be an astronaut and a moment of watching a video of the first moon landing with his father and uncle. Shaun says "I remember thinking – who'd want to be an astronaut? It seemed kind of crass to me suddenly, like they were projections of all the sad frustrated men of America" Harvey (2023). Colonization, expansion, and adventure to the unknown are responses, in part, to a kind of lack of glory and lack of activity in daily lives, particularly around certain expectations of masculinity. A result is whole groups and communities investing emotionally in that colonization like they might in a sports team.

Criticizing the colonial impulse a bit, Chie, a Japanese astronaut, wonders about her mother, who just died, possibly trying to warn her, saying, "we know the fanfare and glory of the pioneering human spirit and we know the wonder of splitting the atom and we know what these advances can do, your grandmother knew it only too well when she stepped off the pavement to a sound she didn't recognise and a flash that seemed both distant and so close it might have happened inside her own head" Harvey (2023). The references to her grandmother are about the atomic bombs dropped on Hiroshima and Nagasaki in World War II. Nell, another American astronaut, reflects on space walks and the perspective of "her left foot obscuring France, her right foot Germany. Her gloved hand blotting out western China" Harvey (2023). This level of perspective shift brings a sense of the nothingness of whole countries, yet the fragility of them all too. The astronauts in Orbital have an extreme and extended perspective based on their location in the ISS, but one that is not wholly different from what the JWST can bring to many.

From the ISS, the actions on Earth seem like an "insane entertainment," but the astronauts come to realize "that it's not a pantomime, or it's not just that. It's a force so great that it has shaped every single thing on the surface of the earth they they had thought, from here, so human-proof" Harvey (2023). Shaun reflects, "that's what we're doing when we come into space, asserting our species by extending its territory. Space is the one remaining wilderness we have. The solar system into which we venture is just the new frontier now our earthly frontiers have been discovered and plundered. That's all this great human endeavour of space exploration really is, he thinks, an animal migration, a bid for survival" Harvey (2023). Shaun's survival justification is a return to that notion of giving ultimate importance to space colonization and is a direct example of finding reasons to make various affective impulses seem fine. Near the end of the story, Harvey's narrator reflects, "Perhaps this spacecraft is the only thing. Silently sliding around an invisible rock. Perhaps it was this way for those early discoverers who, on a blind night at sea, many months and thousands of miles from a coast they couldn't yet be sure existed, had been filled with an intimacy with the earth, some sense that they were the only ones on it, and had known a brief peace" Harvey (2023). This beautiful, brief peace is based a sense of aloneness, an ignorance of others, a feeling that others are not around and so they (implicitly) do not matter. Feelings, again, are the basis of exigence—the

question of what is important and what is not important. Harvey's narrator provides a beautiful, horrible selfishness in prioritizing personal feeling that hides as connection to a place.

ADVENTURE AND OTHER POSITIVE COLONIAL FEELINGS

Numerous real-world colonial feelings present space colonization in a positive light and make it sound necessary. Zubrin (2019) The Case for Space gives the optimistic, colonize-it-all attitude that concerns some more cautious academics and civic leaders. His book has positive blurbs from moon-landing astronaut Buzz Aldrin on the front and science fiction authors (among others) on the back. The optimism oozes out of the subtitle, which includes the phrase "Future of Limitless Possibility," and the book starts with, "Great things are happening" Zubrin (2019). The argument overall includes reasons around new knowledge and research development, the adventurous challenge, and for human survival—among other reasons. The chapter on going for the challenge even positively references the idea of "The New World" and its lack of "ruling institutions" creating "an improvisational theater big enough to welcome all comers with no parts assigned" Zubrin (2019). The "New World" is given credit for starting democracy and removing rulership by kings, religious leaders, and aristocrats. Beyond what many Indigenous Nations might have to say about this, the optimism here pays little attention to the damages done to the land or to many laborers throughout this process. Even so, Zubrin moves next to the need to colonize space for the human species to survive long-term (2019, pp. 287-88). That survival is not about dealing with possibilities for nuclear war, pandemics, or global warming, but rather is about the likelihood of an eventual asteroid strike that makes Earth uninhabitable for humans. This involves thinking in long timescales, which is promoted and perhaps inherent in the age of space telescopes and also makes that jump to species survival as the ultimate goal or good, regardless of quality of life for individuals or how many individuals make it.

The notion that humans still existing as a species is the primary thing to preserve suggests a colonialism all on its own, since survival is best served by variety and dispersal and taking many places. Survival is certainly a contrast to the portions of the environmental movement that considers the extinction of humans the best thing for planet Earth, although the two could go together if humans moved entirely off of Earth. The species survival angle gives a kind of ultimate justification for colonial acts—not just that I will die or we will die, but that literally all of us will die if we do not colonize. This ultimate justification allows feelings of purposefulness, righteousness, importance, and even glory to move to the fore with space colonization. Those environmentalists over there might be trying to save the world, but that's only for a few million years at best. We space colonizers are saving the human species for the long run, maybe until the heat death of the universe. Our goals are bigger and better and even more ethical than yours. It can become the grandest feeling exigence of all.

Late in his text, Zubrin (2019) sets up a dichotomy between freedom, progress, and individuality on one side and those who are against people on the other side. He refers to those concerned about Earth's environmental conditions in introducing "two very different visions of the future. On the one side stands the antihuman view, which, with complete disregard for its repeated prior refutations, continues to postulate a world of limited supplies, whose fixed constraints demand ever-tighter controls upon human aspirations. On the other side stand those who believe in the power of unfettered creativity to invent unbounded resources and so, rather than regret human freedom, demand it as our birthright" Zubrin (2019). While the implications against government regulation, possibly intentional ignorance of the horrible effects on many people that human "progress" has had, blindness to human propensity to oppress each other, and the attitude of being owed an amazing future whatever the cost to others are just a few of the troubling elements for me as a reader, the push for colonization is clear. Colonization is not only desirable, it is a fundamental right, and any negative consequences are not allowed to be spoken of. For Zubrin, the future can have unlimited resources (2019, p. 314), and if it does not, we are all doomed to fight each other over the scraps, which really pairs a powerful pessimism with the potent optimism of the text. The feelings of necessity, freedom, progress, and adventure provide a contrast with desperation, lack, and even despair. Collections of feelings become dichotomized. In this case, the negative feelings are used as a kind of argument in favor of the positive ones and colonization.

The good feelings can even cross the value divides in American politics, as space images tend to be received positively across the majority of the political spectrum. As Battistelli (2012) notes for the Digital Writing and Research Lab at the University of Texas, "Except for the occasional 'why waste money on this?' argument, astronomical images find wide appreciation, appreciation which I certainly share. However, I also see a certain risk in the arguments made using space imagery that can be lost amidst the optimism and wonder." The positive feelings and associations that tend to be predominant with these images make wonder and awe a sort of baseline, immediately shifting aside traditional colonialism concerns. Battistelli continues,

> I find the unifying argument of an astronomical perspective enticing but also risky. If humans ever move out into space in any number, I think it likely that we'll take the full range of our social baggage with us, the values and ideas that inspire both justice and injustice. The risk lies in the tendency for factional interests to disguise themselves as universals. "The people of Earth" as a concept works well in the abstract, but it can obscure the contradictions that abound within that identification.

Battistelli (2012) goes on to note Richard Nixon's name on a plaque on the Apollo 11 lander as one example of how not all the people of the Earth are represented similarly. In this conception, space images are part of the preparatory work for colonization. Those images build interest, inspire appreciative feelings, and imply human universality in relation to the vastness of space. Despite

Battistelli's concerns, the sense of an actual community (like political theorist Benedict Anderson's "imagined communities," (1991)) can bring those feelings of togetherness—even without a war or enemy—when it comes to space. The reception of images from the JWST continues this trend. I saw a speaker using images from the JWST just giddy with excitement over the data provided, and the audience reflected that excitement, ignoring the many other affective and ideological differences present.

Battistelli's critiques have an element of allowing positive feelings about space activities, even while noting the violent contrasts and actions it can be connected to. "[W]hen Nixon spoke to astronauts on the moon from the Oval Office, he was also ordering the bombing of Cambodia and oversaw other campaigns in the Vietnam War. [. . .] I don't mean to suggest that the Apollo program was not peaceful in itself, but it existed within a complex set of relationships between war and peace and between the peoples of the Earth that an overly optimistic perspective can obscure" Battistelli (2012). Colonization is not just about the place people move to. It is also about where they come from and where they use resources and economic inequalities to support that colonization effort. Those relationships can bring positive feelings too, though, particularly around the idea of advances in technology that help wider swathes of people from the space-based endeavors. The JWST, for example, is regularly noted for its work in optics that help with LASIK eye surgery McNamee (2022)—a common surgery, but still one that is limited to the relatively privileged. The feeling of the JWST helping all of us, or at least all of us in a position to be reading about its advances thanks to a strong Internet connection and a little leisure time, remains. More broadly, space colonization is necessary because even the process gives amazing, species-supporting technologies. It feels like progress.

COLONIAL FAMILY FEELINGS

Feelings can provide a sense of relationship or type of connection, too. With the JWST, the descriptions of its goals work to create a feeling of family connection to parts of the universe. Exigence is often stronger when family is involved. Four main mission goals are provided by the National Aeronautics and Space Administration NASA (2021) for the JWST: "Search for the first galaxies formed in the early universe; Observe the formation of stars, from young stellar nurseries to the formation of planetary systems; Study galaxies near and far to inform the evolution of galaxies; Measure physical and chemical properties of planetary systems, including our own solar system, and investigate the potential for life in those systems" (p. 32). That potential for life includes life not originating on Earth and life that might travel there from Earth. The "nurseries" suggest a community of infants and small children who grow and develop under watchful guidance. Humans through the JWST partially slip into that role of the nurse or watcher, even if we are not directing the growth of these stars.

Human feelings about a potential colonizing tool, or precursor to colonization with the JWST are nudged as the telescope is described as a "technological marvel" NASA (2021), not to mention a great deal of attention being paid to the materials involved in making it, all with a tone of being impressed (pp. 39-41). The JWST here is the golden child of the family, but also this fun tool to play with. The excitement and playfulness involved affectively can make concerns or negative affects withdraw, leading to less critical consideration of potential effects of space colonization. The description of the JWST continues with a sense of difficulty or challenge, such as the need to keep the instruments on the JWST extremely cold. Significant emphasis is placed on low temperatures making it so there is little movement, allowing for better images, even as it orbits the Lagrange 2 point and the sun NASA (2021). The emphasis on difficulty and human overcoming of odds is a major part of colonial discourse. Defeating difficult obstacles is part of the progress narrative and set of feelings that go with colonizing places that seem physically difficult to the colonizer.

Physicist and astronomer Rhee (2013) examines the history of looking for early stars and includes the role of the JWST as it was being built. He notes that the distance it will be away from Earth gives it a better view with limited impact from the sun but makes it too far for astronauts to repair it as they have the Hubble telescope at times Rhee (2013). The focus is time, as the JWST "is designed to work at infrared wavelengths which is ideal for searching for the first galaxies" Rhee (2013). Finding "Earth-like planets" and detecting star formation are listed as two other main purposes Rhee (2013). The JWST is all about re-birth. How planets and stars form is the birth part, again and again in the universe (or is it "our" universe, not that we own it, but in the sense that there might be others?). With Earth-like exoplanets, the re-birth is for humanity, looking for a place to start again, if not to start completely fresh—given all the social baggage inevitably brought along. Re-birth can have religious connotations too but creates a kind of parallel between humans as a species and galaxies, with each having a growing up process and different moments of starting afresh with births (on new planets, potentially, and with new stars formed). Colonial feelings here involve a fresh start or renewal. The relief and hope of beginning again comes to predominate affective experiences around the idea of colonizing somewhere new. Colonization feels like a new beginning.

TROUBLING SPACE COLONIZATION

The critique of space colonization and consideration of a variety of affective responses already began in the previous section, as more positive and negative feelings can get mixed up together or be experienced simultaneously. Using the language of colonization is one of the initial concerns presented about space exploration, given the connotations and feelings going along with that language. Science writer and academic Enstrom (2021) reports, "In a recent white paper, a group comprising subject-matter experts at NASA and other institutions warned of the hazards of invoking colonial language and practice in space exploration." The colonial language

is difficult to avoid, given the history of thinking about moon, Mars, and other space colonies. Enstrom (2021) continues, "Treviño argues that the word 'frontier,' the guiding metaphor for American space exploration, is also problematic. The crossing of new frontiers — because frontiers always must be pushed or crossed — is inevitably 'tied to nationalism, and nationalism is tied to conquest, and conquest is tied to death,' she says. When humans push frontiers, they often do so with the belief that it is their right as individuals or as representatives of a country or state. Throughout colonial history, this sense or feeling of entitlement has been taken as license to wipe out Indigenous people and fauna, pollute rivers, and otherwise demonstrate ownership and mastery," (Enstrom, 2021). While "frontier" might be connected to pushing or crossing boundaries, that is frequently, but not necessarily, in national terms. The growth in privatization of space exploration shifts toward other concerns about strictly financial goals for much exploration or even toward non-national forms of conquest. The terminology is easily connected to western expansionism from U.S. history. The idea of opportunity for the less enfranchised is potentially there, although imagining opportunity in space is more difficult than on Earth given the skills and training involved so far. Enstrom (2021) explains,

> Foundational concepts such as "conquest," "frontier," and "Manifest Destiny," can affect not only how people think about space but also how they act toward it. In their Nature Astronomy paper, Venkatesan and her colleagues argue that in addition to promoting colonialist ideals, such concepts promote space capitalism and a lack of regulation. Potent symbols of this trend are the more than 3,000 operational satellites currently orbiting Earth, many of them privately owned. For people who use the stars to navigate, or who incorporate celestial bodies into cultural, spiritual, and religious practices, this intrusion intothe skies threatens to compromise a way of life. And it is a sobering reminder that space and the sky don't really belong to everyone after all.

The argument here suggests that all colonization is bad, unethical, or at least morally risky. A natural follow-up question is how much the language is the key point here, because colonial language connects to earth-based histories of destructive colonizing practices. Is there alternative language that would work better, or would that simply hide the same sort of practices, policies, and feelings? A further implication of Venkatesan's statement Enstrom (2021) is that space colonization is different from colonizing on Earth in some key ways. Notions of "conquest" and "frontier" might not apply in the same way, but then, how is space colonization different? The most overt difference is the fact that there are not humans or other living creatures where the colonization might happen—say, on Mars. Of course, that is only based on what we know thus far, and finding out negative effects on people and places is a frequent post-colonization realization (which was usually apparent to the people most affected from early stages). The language focus emphasizes the immediate affective responses to different terms. The idea of a conquest might immediately negate the value of something for some listeners, just as others might find frontier to automatically push something toward being worthwhile.

Colonization is not just one thing in space, regardless of the terms used. Mary-Jane Rubenstein (2022) considers Elon Musk, Jeff Bezos, and other wealthy figures looking to expedite the escape from Earth or the use of the solar system as full of natural resources. The book considers this treatment of our solar system as a kind of next step in the "doctrine of discovery" and "manifest destiny" that served as the basis for so much colonial exploitation in the last several centuries Rubenstein (2022). Discovery is a doctrine that can come out of a feeling. That "eureka" moment and sense of personal capability and fulfillment of curiosity that come with discovery make it a powerful affective force. The doctrine, as Jonathan Haidt implies throughout his work on reason being used to justify feelings (2013), becomes a way to legitimize the affective experience (and financial gain) that is so compelling. Rubenstein argues that the myths and stories used about space take on a religious nature and so any countering of those myths that lead to understanding space as a container for resources must also take on a religious angle and use alternative stories (2022, p. xi).

In many narratives or alternative stories, the exploration, mining, and development of planets, moons, and asteroids in space is done in the name of saving humans, often in ecological terms Rubenstein (2022). The justification for colonization is extreme in this case. Saving the species by leaving the Earth is the short version. Colonizing is for all of us, supposedly, yet many stories show it is not, as people fight to get on the ships leaving Earth. Maybe bringing resources back to Earth is the saving element, but preserving the species can become the justification for any action, since no human moral questions would be left with no humans at all. The different goals that individual and corporate funding of space work have is vital to Rubenstein's (2022) argument. Elon Musk and Jeff Bezos want different things. "Musk wants to go to Mars" Rubenstein (2022). He thinks human life on Earth will end sooner rather than later. Musk as "doomsday prophet" Rubenstein (2022). That move towards Mars does not just symbolically deprioritize Earth, it can lead to very practical actions harming ecosystems. "Considering the coral reefs, wetlands, and clean skies that SpaceX has polluted and destroyed—and considering Musk's own advancement of the artificial intelligence he worries might wipe us out—one could even accuse him of worsening the disaster to intensify the need for salvation. Of making the planet genuinely uninhabitable so that we will, indeed, need to leave it" Rubenstein (2022). These are different versions of colonization, but both accentuate the fact that major effects happen in the society (or world) used as the starting point for colonization. In other words, the negative effects are all about ecosystems and people on Earth too. Feelings of doom and power and adventure all go together in Musk's approach with its savior factor. Like earlier European colonizations, the land and particular people groups may be severely harmed, but those are primarily in the places the colonization comes from in this case.

The feeling of being a savior of sorts is central for Bezos too, but there is less adventurous excitement at the individual level. Rubenstein (2022) notes, "Like Musk, Bezos begins his own story with impending disaster, but his opening character is Earth's ecosystem rather than the human species....Bezos worries about the increasing strain humans are putting on Earth itself" (p. 19). The

idea is to go to space to solve our energy problem. An exigence, a feeling of urgency must be created, even if they are slightly different versions from Musk and Bezos. Mine the moon and build "space pods" for humans to live in says Bezos Rubenstein (2022). The feeling here is more one of relief and practicality than excitement. For Bezos, says Rubenstein, "Earth becomes a planetary park" (2022, p. 21). Most humans live elsewhere and polluting industries are off-planet.

Religious feelings of sacredness and purpose can take charge with space colonization too. Rubenstein notes that some "claim divine sanction for the specifically American seizure of outer space" (2022, p. 32), while the NewSpace tech elite use a similar ideological justification of saving others that is heir to a Western Biblical narrative (p. 33). The claims of ownership are strong when former Vice President Mike Pence and others claim that the Bible "assures us that the universe is ours" and God is with us anywhere (p. 30). Religious moral grounds for colonization are nothing new, but the secular attempts to colonize attempt to maintain that human centrality, species preservation (instead of souls), and sense of ultimate moral purpose and rightness that overcomes all other ethical concerns. Even the Apollo 8 astronauts did a reading of Genesis 1 in space. Rubenstein notes, "in the Americas in particular, religious behavior and religious claims have traditionally underwritten political and economic pursuits...the crew of Apollo 8 was asserting America's God-given dominion over creation itself. This space, they were saying, is our space" (2022, p. 80). The variety of efforts at justifying actions already taken are both impressive and typical. Beyond the language of colonialism Enstrom is concerned with, the pseudo-religious justifications of colonization call back to European missionary work as a first move to many places and bring an extremism of right and wrong that allows for only the singular priority of human species preservation. The affect is intensified here, with strong feelings and argued justifications reinforcing each other into an unassailable circle.

Further critiques of colonization come from the potential for creating new wars—very much here on Earth along with in space. Deudney (2020) identifies contemporary society as "machine civilization" and, after identifying five main dangers to continued human existence (nuclear war, genetic modification, information surveillance technology and practice, artificial intelligence, and the degradation of Earth's human habitats), and notes that the only outside to the interconnected world is potentially outer space. He suggests that space expansion is usually understood as entirely positive, even if still far off Deudney (2020). Spatial growth or movement on Earth is virtually finished, so space is what is left. He says, "Space expansionism is a simple and captivating ideology. It extrapolates and amplifies the Promethean worldview of technological modernism into a project of literally cosmic scope" Deudney (2020). This idea of being "captivating" is part of the affective connection. Feelings work as a sort of attention grabber, attention keeper, and propulsive force in the direction of expansion. The grandiosity of the scope is key to the affective responses involved. Deudney (2020) argues for a "darker net assessment of actual space activities" that "centers on the role of space activities in making nuclear war more likely." He says that space expansion should be added to the list of five main dangers to the survival of humans (Deudney (2020). This is a geographic and political argument that hopes for a grimmer affect. The focus on nuclear war throughout Deudney's text is part of the push to create that more fear-oriented feeling. The problems and feelings around space colonization do not differ radically from other expansions. Deudney further argues that "Space expansionist thinking is sustained by an imposing and seductive edifice of illusions and evasions" (2020, p. 368). Instead of bringing freedom or a solution to human dangers, it simply creates more difficulties of survival and governance in space and, given the technologies involved, increases the risk of devastating war (particularly nuclear) on Earth.

Instead of being a grand adventure, colonizing Mars and other places outside Earth's atmosphere can be experienced as risk and danger. The concern is that it fundamentally increases specific risks to Earth itself because of the exponential growth in meddling with space (altering asteroid paths, for example) and the proliferation of dangerous political actors with different goals and perhaps no common need to take care of Earth Deudney (2020). Losing the sense that Earth itself must be preserved at all costs could remove the last inhibitions for activities ranging from massive additional carbon usage to nuclear war. The idea of giving up colonization is not so much unthinkable at this point as it is unfeelable. What an amazing thing for humans to not try. The pent-up feeling pressure of never going to Mars might be too much to overcome. Potentially, there is a strong element of slippery slope thinking being used by Deudney to suggest the dangers of space expansion as a kind of counter to the slippery slope thinking about the positives of space expansion. Regardless, the adventurous, purposeful, moralistic feelings of many about space colonization have their critics who bring in connections from nuclear war to economic inequality to encourage alternative affective responses.

ACCORDING TO NASA'S (2023) INTRODUCTION TO SPACE COLONIZATION MATERIALS,

> The urgency to establish humanity as a multi-planet species has been re-validated by the emergence of a worldwide pandemic, one of several reasons including both natural and man-made catastrophes long espoused in the pro-colonization rhetoric....
>
> To be sure there are many daunting challenges facing prospective space colonists. . . The benefits that await us as direct or incidental byproducts of space colonization could include advances in architectural design, alternative fuel production, 3D printing and low-gravity manufacturing to name but a few."

NASA presents a neutral tone toward space colonization, referring to others who might be excited about it, but they suggest an "urgency" as well. There is a felt pressure here. The affective intensity can be described as a need to deal with catastrophes that seem difficult to respond to. Exigence is the usual rhetorical term for the urgency around a public problem, but the way the urgency is felt, is affective before getting defined into a particular problem, is not typically highlighted. The urgency of space colonization is primarily

a feeling of pressure that NASA implicitly endorses. Positive affective elements are layered on with the possible benefits to humanity in general from addressing the "daunting challenges" of space colonization. An impression of tough, smart, hard workers who overcome things is given, so the pressure of earthly catastrophes gains a layer of being able to feel like one who overcomes obstacles to benefit all. Feelings about situations and selves combine here; an exigence about me can be the most powerful of all.

CONCLUSION

Exigence and the affect can become indistinguishable. I feel it, therefore it is important; and, it is important, so I feel it urgently (but the direction or style of that feeling can change). n rhetorical terms, the important role of affect here, as in many instances, is to serve as the exigence. Exigence is a particular type of affective response; it is an urgency marked by styles or directions of feeling, perhaps an angry urgency or an adventurous one. Often, concerns about climate or other issues on Earth uses fear to drive the feeling of urgency to colonize elsewhere and to justify that colonization through other feelings (like adventure, species love, and powerful purpose). The realm of science fiction sometimes helps show that colonization to other solar systems may not be reasonable anyway Baxter (2009), Liu (2021a), Liu (2021b), Stephenson (2015). That work provides a tension or even rebuke to expansionist ideas like Musk's. Nonetheless, it does not escape the focus on saving the species in general and the feelings of urgency and necessity to do so. The urgency can be about human growth in the case of colonization.

Space colonization comes with a progress narrative with an "evolutionary leap from the rocks to the stars. But the usefulness of this grand story is questionable to anyone with more particular concerns than the alleged history of the species" Rubenstein (2022). Colonization is about changing humans too. The sense of guiding evolution or giving it new possibilities by going to space implies a teleology of sorts, at least of humans going in new directions. It can be a species-based manifest destiny where of course humans will move to outer space and become something evolutionarily different. The implication is this can be a necessary or positive change, again justifying colonization.

Space as a new frontier is treated similarly to "principle of terra nullius, or no one's land. If a territory could be said to be empty, or underused, then it was subject to seizure or purchase by the first European nation to claim it" Rubenstein (2022). This gives virtually no status for the land itself (or minerals, water, energy sources, and so forth). Part of the implication of no one's land is that it could become anyone's land. It is ready to be claimed by competing groups of humans. Expansion is not just an action but a feeling of power and ownership and status over those things that are non-human. Space colonization comes with the feeling of still being high on the great chain of being—even if the vastness of space is humbling. Pride returns as that vastness is something that can be grasped and even technologically dealt with Kant (1987) sublime, where reason conceives of vastness and therefore overcomes it to some extent).

One issue with this tendency for affect and exigence to merge is a move towards a kind of dictatorship of feelings. Feelings are things to be valued, that people are entitled to have, and so forth—but when do they mean action is necessary? In the case of space colonization those feelings get used to justify the necessity of action. Much of the history of colonization uses the affective experience of powerful individuals and nations to demand action. Affect as exigence can be a kind of trump card, pushing more complex questions of ethics and effects to the side. The individual version of this issue might be asked as, "when do your feelings require my actions?" Feelings serve not just exigence for one person, but as the primary argument for exigence for others to act too. Those others may feel differently, and one is left with a clash of feelings, often leading to a fight over whose feelings are more intense and whose purpose (saving humanity) is stronger—with the feelings and ethical purpose becoming conflated. The moral high ground is a felt experience, justifying colonization and anti-colonization alike. Rhetoric is not so much a struggle of arguments but a struggle between feelings and who has the power to get their feelings to count in public contexts.

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